

## Conditions and changes in the computer-aided analysis of historical record series: the case of early modern urban administration

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Conditions and Chances in the Computer-Aided Analysis  
of Historical Record Series: The Case of Early Modern  
Urban Administration

This report has been written for a twofold purpose. First, it provides some information on a research project of the Sonderforschungsbereich 8, University of Tübingen, the „cities-project“, dealing with social inequality in selected towns of South Germany and with the prosopographical characteristics of their political elites<sup>1</sup>. Second, the report will present some ideas concerning the reinterpretation of the output of early modern urban administration which point to new questions and research results in early modern urban social history. It focuses on the methodological conditions and opportunities of the cities-project carried out under the official title „Towns in Late Medieval Times and During the Reformation Period in South Germany“ and employing quantitative methods using EDP and certain approaches of the social sciences.

Subjects of investigation are ten early modern towns which have been selected according to typological criteria such as size, legal status, territorial affiliation („Stadtherrschaft“), function, attitude toward the Reformation movement, and of course, the sources available. This project is part of a larger research program evaluating the impact of non-theological factors on the Reformation in Southern German cities, imperial or territorial. In addition to this subsidiary function, the „cities-project“ has its own legitimation in the effort to analyse a larger number of early modern towns on the basis of one methodological approach and in comparative perspective.

The end of the project would not be exciting without the given temporal frame. The study is focused upon towns of the 15th and 16th centuries, and it is just this fact which defines the specific conditions, difficulties, problems, and opportunities of the research done.

Until today, historical research was concentrated, as far as it used complex statistical methods and EDP, on the social and economic history of the 19th and 20th centuries. This branch of historical work which has been carried out in the German Federal Republic in the last few years is known as historical social science („Historische Sozialwissenschaft“). In regard to early modern social history the situation is

<sup>1</sup> Ingrid Bátori, Dieter Demandt, and the author are participating in the „cities-project“ under the leadership of Hans-Christoph Rublack.

quite different. As Moeller, Dickens, and Ozment pointed out, there is little doubt of the very important role the cities played in the Reformation; for example, Dickens called the Reformation „an urban event“<sup>2</sup>. Beyond this, many studies, in fact case studies on individual towns, have been published in recent years. However, early modern urban social history shows at least two deficits, one methodological and the other theoretical.

- Traditional idiographic methods have dominated early modern social history and they do so today emphasising the individuality and singularity of each case.
- Early modern urban social history did not develop characteristics and criteria fitting through systematic comparative analysis, or did so in an insufficient way. There was and is little interest in the application, testing, and if needed, modification of theoretical models and/or middle range theories as they are worked out, discussed and used by the social sciences<sup>3</sup>.
- Early modern urban social history did not see the possibilities and advantages of of quantitative analysis or did so on an unsatisfactory level. Until today, the general standard of statistical data processing was extremely low.
- There is still a remarkable unwillingness to use technical means like the computer in early modern urban social history.

In short, the social history of early modern cities, as Leo Schnore put it, remains „a field without focus“. It runs the risk of not meeting the more developed standards of the social sciences and historical social science for the post-industrial eras. The „cities-project“ of the SFB 8 tries to compensate for some of these deficits to a certain and limited extent, at least within the possibilities of its thematic frame, and according to the available sources and the professional training of the collaborators who are involved.

As a starting point we assume that early modern towns with their relatively permanent legal, social, economic, and social-psychological relationships represent a complex social unit which can be called a social system. The structure of these social systems can be subdivided, described and analysed in accordance with certain criteria and dimensions. As Schnore has pointed out, the most important facets of the urban social systems are the demographic, ecological, structural and socialpsychological aspects<sup>4</sup>. In addition, a systematic investigation is bound to look at its results both in a macro-analytical and a micro-analytical perspective.

As a general principle it is impossible to explore „past present times“ (N. Luhmann) unless they have produced and handed down adequate and sufficient sources. This is the case on the whole, as far as the selected towns are concerned. (In visiting more than 120 archives in Southern Germany we found in about 20 to 25 ar-

<sup>2</sup> Dickens, G. A., *Luther and The German Nation*, London 1974, p. 182.

<sup>3</sup> See now as an extremely valuable exception Brady, Thomas A., *Ruling Class, Regime and Reformation at Strasbourg 1520–1555*, Leiden 1978 (= *Studies in Medieval and Reformation Thought*, XXII).

<sup>4</sup> Schnore, L. F., *Problems in the Quantitative Study of Urban History*, in: *DYOS*, (1971), pp. 189–208.

chives material and record series which provide a worthwhile basis for research on topics including the policy of urban authorities towards ecclesiastical institutions and a comparative study of the patterns of the Reformation-process.)

The critique of historical sources subdivides the corpus of sources into tradition („Tradition“) and record series („Überreste“); the latter being of great importance to the present research project in discussion. Of the record series in view, one deals primarily with the output of urban administrations and bureaucracies which German historical science generally calls „Akten“ (records). Records in this sense are characterized not by the outer form, in contrast, for example, to the medieval charters and documents, but by their function and their contents. The late medieval, early modern records have the function of being a „Memorialschriftstück“ (Pitz), i. e. documents that testify to the execution of administrative acts prepared for the use of the acting authority. As a consequence, investigation and interpretation of record series must start with acquisition of knowledge of the respective early modern bureaucratic organizations and their activities. In contrast to modern standards, early modern record series are not interpretable easily or readily, they demand intimate knowledge of the structure and scope of duties and functions of the administrative authorities in general and of municipal administrations specifically. In this context administrative activities mean, once again in contrast to modern times, all activities of the municipal authorities, whether they belong to the administrative field in a strict sense, or to the field of legislative authority or the judicial area in modern terms<sup>5</sup>.

Now, late medieval and early administrative organization presents an extremely complicated and confused picture of entirely unsettled administrative bodies and structures corresponding in no way to the modern administrative and bureaucratic system. In addition, local and regional peculiarities complicate these general facts considerably. The auxiliary science dealing with historical records has detected the basic principle guiding the late medieval and early modern urban constitution and administration: they tend to a perfect unity and centralization of the urban governmental power in the hands of the municipal council with simultaneous delegation of certain administrative functions to special administrative bodies. The constitution of the municipal council defines the field of urban administrative activities and, vice versa, the administrative activities specify the municipal constitution. The council of the towns in the 15th and 16th centuries differs from its medieval forerunners as from modern urban administration by its fundamentally unlimited administrative power. Within the urban administration, the council as a whole governed and acted in a nearly arbitrary way; it was not at all limited by rights of administrative or bureaucratic rules. In those days, municipal administration was a field without legal basis. Individual clerks executed certain administrative functions as a duty, not as right. The all embracing responsibility and power of the municipal council has some

<sup>5</sup> Pitz, E., *Schrift- und Aktenwesen der städtischen Verwaltung im Spätmittelalter*, Köln-Nürnberg-Lübeck, Beitrag zur vergleichenden Städteforschung und zur spätmittelalterlichen Aktenkunde, Köln 1959, p. 29.

characteristic consequences: as a general principle no restriction of administrative activities and functions; no defined areas of powers; no sequence of courts; no or only minimal disputes about competences. The general and everyday conditions and needs of life in urban social systems, as I would like to emphasize: exclusively these conditions and needs, induced and necessarily modified style, procedures, range, and topics of municipal administration. In spite of the tendency to unity and centralization, the internal development of the social systems and the emergence of new external political conditions caused a growing differentiation of the fields of administrative activities and functions within the towns of the 13th and 14th centuries at the latest. They necessitated an effective execution and handling of specific financial and military, economic and commercial acts of administration by the municipal authorities; since the beginning of the Reformation movement additional administrative functions and needs grew up in the domain of social security, church, and school. But this development did not break the general principle of the late medieval and early modern administrative structure: city council and the existing specialized administrative boards have to be regarded as *one* bureaucratic organization, in spite of all varieties in local municipal administration, whereas today administration represents a more or less clear hierarchy of complex departments and purviews with early important autonomous free play and powers.

In a historical perspective, the necessity to administrate is older than the practice of doing so in writing. To be sure, for the purpose of our research the general realization of writing administration since the 14th and 15th centuries indicates the point of take off for a systematic research on early modern administration and its output. With that, the most relevant universal conditions for the analysis of historical record series by the early modern urban social history are fixed: They depend on the knowledge of the nature of the early modern administrative and municipal organization in general and the local and regional varieties in particular; they depend on the knowledge of the historical situation given, i. e. the researcher has to pay adequate attention to the dimensions of time and space; they depend on a sufficient training in auxiliary scientific techniques and methods such as source-critique, paleography, early modern high or low German language, humanistic latin, history of money, numismatics, history of weights and measures, and so on. Last not least they depend on the existence of usable record series in sufficient density and quality.

In the case these requirements are fulfilled, historical record series may be interpreted as process-produced historical data. They have the following characteristics:

- Process-produced historical data have been produced without the intention of historical information, but for certain official, commercial or private ends or without any observable purpose.
- Above all, they are results of administrative and/or bureaucratic acts in a broader sense.
- They are topical, that means up-to-date in the sense of passed presence.
- They contain large quantities of mostly homogeneous information.
- As a rule, they are quantitative or can be quantified.

- They inform directly on facts of passed presences which I would like to call „function of direct information“ and
- they give evidence in an indirect way as indicators on topics whose notification was neither the aim nor the purpose of the data-producer; this I would like to call „function of indirect information“. (I am not sure whether it is useful to make the distinction of „hard“ respectively „soft“ data.)
- They can be processed, i. e., they are feasible for the systematic and automatic analysis of properties and connections, especially by compromising, manipulation and reduction of their manifest or latent information.
- They are to be subjected to an adequate historical critique before being processed and interpreted.

The „cities-project“ of the SFB 8 concentrates, besides other towns, on the town of Kitzingen on the Main river. This town may serve the purpose of demonstrating the concrete realization of the research work going on.

In the 15th and 16th centuries the town of Kitzingen was pledged to the county (Markgrafschaft) of Brandenburg-Ansbach. It was not an autonomous imperial town, but a so called „landsässige“ town under a secular lord. Compared with the number of big or bigger cities of the Holy Roman Empire, Kitzingen was a relatively unimportant example of middle-sized town with about 3,000 inhabitants earning their living mainly by viniculture. The level of complexity of this urban social system does not match the niveau of important urban centers as Strasbourg, Nürnberg, Augsburg, Cologne or Lübeck. But in our context the town of Kitzingen is a special case in so far as it is outstanding owing to an excellent situation of its record series. Despite the simple and rough structure of the Kitzingen administration, the abundance and the quality of the record series handed down reflect an extensive and precise administrative activity of the municipal council. I will describe the most important record series and then give an outline of their processing and the substantial results coming forward.

The development of the municipal constitution went along with the emergence and formation of an efficient administration of finances. The salient characteristics of the administration of the finances — such as autonomy, regular direct taxation of all citizens respectively productive system of indirect taxes, taxation as a forced impost, principle of nonaffectation, audit by the council and/or the citizenship and so on — invited the comparison with modern administration of taxes. The records produced by this urban administration of finances contain information which are process-produced historical data in a typical way. As a rule the date can be found in tax-roles or registers of taxation; they were used as lists of debit and credit with the purpose of fixing and collecting taxes. The tax roles of the town of Kitzingen do not only give information about the taxation of the citizen (as far as they were obliged or worthy to pay taxes) and the tax yield of the town as a whole, moreover they register the whole taxable property of all persons. Therefore they enable the researcher to investigate in a penetrating way the socio-economic situation of the town and the citizenship. It is possible to compute, within certain tolerances, the number of inhabitants. In the case of the Kitzingen tax-roles which are subdivided

in quarters, it is possible to give exact information about the number, the density, the displacement of population and properties in every quarter throughout the century. Unfortunately, the registration of the occupations seems not to be complete, although it is not impossible to reconstruct approximately the occupational structure of the town. Finally, tax-roles record the number of unmarried women and the widows.

The parish registers of the town of Kitzingen give the best information about the demographic facts. They have a complicated and rather confused coherence which is just a reflection of the unarranged and not yet fully formed administrative structure of the early modern town<sup>6</sup>. The historical auxiliary science did detect the inner dependence and tangle of the parish registers, so, in principle, there are enough data to deal with the demographic aspect of this town. For the time being, the „cities-project“ confines itself to analyse the demographic data for the political elite. Complete analysis of all data on birth, marriage and death will follow at a later date.

In connection with the end of the pawning of the town in 1628/29 two stout volumes were produced containing data which have an inestimable value for the analysis of the political elite, the members of the council, the structure of the municipal administration and so on. The so called compilation of Paul Rücklein, a town-clerk, and the *Topographia* of Salomon Codoman, a rector, contain nearly complete lists of all municipal officials and functionaries from the beginning of the 15th century up to 1628. Again, the correct interpretation requires a precise knowledge of the urban constitution and the administrative apparatus which on the other side depends on the accurate analysis of the data to be found in these volumes. This dialectic method of interpreting and evaluating data by the acquaintance with the administrative activities which produced them and which can mainly be studied by just investigating those data can be regarded as a typical example of the scientific intercourse with process-produced historical data. Other historical sources like chronicles are helpful and — au fond — indispensable means to fulfill the aims of historical research.

It is neither possible nor necessary to present here all the other record series completely. The catalogue of records we have been dealing with includes such important series as the books and registers containing the marriage contracts or contracts of guardianship (about 6,000 pages), the minute-books of the municipal council, beginning in 1527 or the so called „Steuer Receßbuch“, a sort of account-book enabling the reconstruction of the urban budget for over 30 years. A rough computation of the size of the existing record series brings to light that in Kitzingen there are about 12 000 to 14 000 pages with about 100 000 data relevant for the

<sup>6</sup> See Simon, M., *Die Kirchenbücher Kitzingens und ihre Stellung in der Geschichte der Kirchenbuchführung*, in: *Zeitschrift für bayerische Kirchengeschichte*, 26 (1957), pp. 146–162. The parish registers are to be found in the Archives of the Katholisches Pfarramt St. Johannes and the Evangelisches Dekanat, both in Kitzingen. All other mentioned sources are in the Stadtarchiv Kitzingen.

cities-project. So, even this case of a small insignificant early modern town confirms David Herlihy's statement that it is possible (I would like to add: necessary) to use quantitative methods including EDP at this early stage of the „protostatistical era“ with great success.

For the purpose of a systematic analysis some of the mentioned record series were brought into machine readable form, completely or partly, and stored on tape. A number of specific computer-programs, written in FORTRAN, manipulate the data in order to print alphabetical lists, lists of taxation ranks and graphs of the distribution of frequencies. SPSS is used for statistical computations (measures of localisation, dispersion, skewness, curtosis etc). Only in a few cases it seemed pithy and suggestive to compute more complex statistics like measures of regression and correlation. The efforts to aggregate data relevant and needed for the prosopography of the political elite automatically, i. e. to manage record linkage corresponding to the needs of the „cities-project“ did not work as requested; but as a matter of fact, the work, done by nonprofessionals, is not yet finished.

The systematic analysis of all record series available, even if computer-aided, does not yield a perfect analysis of the social structure of the town of Kitzingen, at least if the standards of the social sciences are requested. But it is possible to describe and analyse some facets of the urban social system covering mainly, in Leo Schnore's terms, the demographic, ecological, and structural aspects of the urban history. The contrasting of social history and biographical history is the focus of the research done; that means methodologically, the confrontation of data and issues obtained by macro-analytical approaches and techniques on the one hand and data and results obtained in a micro-analytical way on the other hand. This corresponds to the basic hypothesis that urban leading classes do necessarily function within a social context. Social and political leadership is conceivable only in a process of social interdependence. There are no leaders without society, no elite without masses in the early modern urban social systems, too, although leadership in the 16th century within an urban context is different from leadership in a post-industrial mass society. Consequently, each investigation of political and social leaders has to throw light on the range and the structure of the urban social system which is as a whole the basis to define the leading class. Because of the direct and narrow coherence of elite and social differentiation the analysis of social inequalities is of great importance. The „cities-project“ interprets social differentiation as socio-economic stratification on a vertical continuum. Social appreciation and prestige are a necessary, but not exclusive criteria to define the term. The gradation of the social strata is possible according to the contemporary ideas of rank and status of „Stände“ and other social groups given. But there is no doubt that the „Zeitgeist“, emerging from those ideas, was the spirit of the masters and the lords or, as Engels and Marx said, the ruling ideas of a time were always and only the ideas of the ruling classes. Conceptions and clues of common equality did exist, but in the contemporary corset of a given unequal world which could not be called fundamentally in question. Common equality and common best („gemeiner Nutzen“) were a privilege of the companions respectively of the citizens owning the full municipal citizenship, and



they were always and only a part of the social system, although they have been usually identified with the social „organism“ as a whole by a traditional historiography. So, we have to ask, whether the contemporary ideas and ideologies of social value and ranking as reflected by rules of marriage, of garments or processions etc., did not implicate the end to guarantee the function of a social unequal whole which had to stay unequal. With that, the importance of those historical sources depreciates for the purpose of a social order of status and strata. An urban stratification can be ascertained if one succeeds in separating social stratification and social prestige and in replacing the term by empirically detectable and controllable indicators occurring in connection with social prestige in order to prepare general comparability<sup>7</sup>.

As far as the early modern towns are concerned, we assume, following Erich Maschke, that property and wealth defined the degree of social prestige<sup>8</sup>. Therefore, in obtaining the social stratification by the theory of indicators, we interpret the incidence of taxation as a substitutive element suggesting the structure of distribution of property and the structure of social inequality within an urban society as well.

The results of our research on the social and economic history of the town of Kitzingen will be presented in the course of this year. An omnibus volume will contain the design of the socioeconomic stratification, the investigation of property and wealth of the citizenship, an analysis of the political and administrative municipal apparatus and a prosopography of the political elite including the relationships, the economic position, the political participation and, as far as possible, the deviant behaviour of individual members of the elite.

The well-known difficulties of any urban history to get in view the socialpsychological aspect of the urban social systems caused a critical gap in the study of the town of Kitzingen, too. This aspect is not treated, but in a way of patchwork, putting together the accidental and isolated news on behavioral patterns, role expectations and attitudes of the members of the elite, hidden in the minute-books. This is for the simple reason of the special nature of the record series investigated: it was the unusual and the changing data that were put down (Bick-Müller: „Veränderungsdaten“), process-produced historical data are scarcely suitable to fill this gap. So we have to repeat the sentence of Leo Schnore with special emphasise for every research on early modern urban social history: „All in all, historical behavioural studies appear to be virtually impossible, at least if rigorous standards of research are demanded.“

<sup>7</sup> Schäfers, B., Sozialstruktur und Wandel der Bundesrepublik Deutschland. Ein Studienbuch zu ihrer Soziologie und Sozialgeschichte, Stuttgart 1976, p. 252.

<sup>8</sup> Maschke, E., Die Unterschichten der mittelalterlichen Städte Deutschlands, in: Maschke, E. and Sydow, J. (eds.), Gesellschaftliche Unterschichten in den südwestdeutschen Städten, Stuttgart 1967, pp. 1–74.